IN THE CLAIMS

Please amend the claims as follows:

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1. Deleted.

2. (Amended) [The method of claim 1,] A method of minimizing probability of error for decoding messages of unequal lengths and unequal *a posteriori* probability for blind transport format detection (BTFD), comprising:

receiving an incoming stream characterized by a preselected transport format;

computing a metric for each possible transport format of the incoming stream, including the preselected format; and

determining the preselected transport format based on a best one of the computed metrics,

TRANSMITTING ?

wherein the metric is a function of:

$$\frac{\left(\sqrt{\alpha_s\hat{E}_s\alpha_p\hat{E}_p}\right)}{\beta(\alpha_s\hat{N}_t\alpha_p\hat{E}_p)}E_{VD}(n_c)-\frac{n_c\left(\sqrt{\alpha_s\hat{E}_s\alpha_p\hat{E}_p}\right)^2}{2\alpha_s\hat{N}_t\alpha_p\hat{E}_p}-n_m\ln(2)\quad,$$

where

$\alpha_s\hat{E}_s$ is an estimated energy of a signal component per symbol in the incoming stream,

$\alpha_p\hat{E}_p$ is an estimated energy of a pilot component per symbol in the incoming stream,

$\alpha_s\hat{N}_t$ is an estimated noise variance per symbol in the incoming stream,

n_m is a length of a message corresponding to the transport format under consideration,

n_c is a length of a codeword corresponding to the transport format under consideration, and

$E_{VD}(n_c)$ is an energy computed by a Viterbi decoder for a hypothesized codeword of length n_c.

3. (Original) The method of claim 2, wherein the BTFD is in a CDMA system.

4. (Original) The method of claim 3, wherein the CDMA system is a W-CDMA system.

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9. (Amended) [The method of claim 8,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising: No decoding

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

wherein the at least one unknown signaling characteristic relates to a transport format for the transmitted message.

10. (Original) The method of claim 9, wherein the transport format identifies a particular length for the transmitted message selected from among a plurality of possible message lengths.

11. (Amended) The method of claim [8] 9, wherein the at least one unknown signaling characteristic further relates to a rate of the transmitted message.

12. (Original) The method of claim 11, wherein the transmitted message has a particular rate selected from among a plurality of possible rates.

13. (Original) The method of claim 12, wherein plurality of possible rates include full, half, quarter, and eight rates.

14. (Amended) The method of claim [8] 9, wherein the metric is derived based on a particular signaling scheme used to map the transmitted message to the sequence.

15. (Amended) [The method of claim 8,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising: No Decoding

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

wherein the metric is expressed as:

$$\text{metric} = \left(\frac{1}{\sigma^2}\sum_{i=1}^{n_c} x_i y_i\right) - \left(\frac{n_c V^2}{2\sigma^2}\right) - n_m \ln(2) \quad ,$$

where

$\underline{m}$ is the hypothesized message being evaluated,

$\underline{y}$ is the received sequence,

n_m is a length of the hypothesized message being evaluated,

n_c is a length of a codeword corresponding to the hypothesized message being evaluated,

V is a magnitude of a transmitted sequence corresponding to the received sequence, and

σ^2 is a variance of noise in a channel via which the received sequence was transmitted.

16. (Amended) [The method of claim 8,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising: no decoding

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

wherein the metric is expressed as:

$$\text{metric} = \left(\frac{1}{\sigma^2} \sum_{i=1}^{N_C} x_i y_i \right) - \left(\frac{N_C R V^2}{2\sigma^2} \right) - n_m \ln(2) \quad ,$$

where

$\underline{m}$ is the hypothesized message being evaluated,

$\underline{y}$ is the received sequence,

n_m is a length of the hypothesized message being evaluated,

N_C is a length of a codeword corresponding to the hypothesized message being evaluated,

$\sqrt{RV}$ is a magnitude of a transmitted sequence corresponding to the received sequence, and

σ^2 is a variance of noise in a channel via which the received sequence was transmitted.

17. (Amended) [The method of claim 8,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising: no Decdg

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

wherein the metric is expressed as:

$$\text{metric} = f_1(E_{VD}) - f_2(E_C) - f_3(n_m) \ ,$$

where

E_{VD} is an energy related to a correlation between the received sequence and a sequence generated by re-encoding the hypothesized message being evaluated,

E_C is an energy related to a transmitted sequence corresponding to the received sequence,

n_m is a length of the hypothesized message being evaluated, and

$f_1()$, $f_2()$, and $f_3()$ represent functions of an argument within the parenthesis.

18. (Amended) The method of claim [8] 9, wherein the metric includes a first term indicative of an energy between the received sequence and a sequence corresponding to the hypothesized message being evaluated.

19. (Original) The method of claim 18, wherein the first term is derived by a Viterbi decoder used to decode for each hypothesized message.

20. (Original) The method of claim 18, wherein the metric includes a second term having a variable for each unknown signaling characteristic.

21. (Original) The method of claim 20, wherein the metric includes a second term having a variable for a length of a code sequence corresponding to the hypothesized message being evaluated.

22. (Original) The method of claim 20, wherein the metric includes a second term having a variable for a rate of the hypothesized message being evaluated.

23. (Original) The method of claim 20, wherein the metric includes a third term having a variable corresponding to a length of the hypothesized message being evaluated.

24. (Amended) [The method of claim 8,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising:

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

wherein the metric includes a variable for a signal amplitude of a transmitted sequence corresponding to the received sequence.

25. (Amended) [The method of claim 8,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising:

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

wherein the metric includes a variable for a variance of noise included in the received sequence.

26. Deleted.

27. (Amended) The receiver unit of claim [26] 28, wherein the decoder is a Viterbi decoder.

28. (Amended) [The method of claim 26,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising: 112 Meth + Approp dep 26

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

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wherein the demodulator includes:

a pilot processor configured to receive and process the input samples to provide pilot symbols,

a data processor configured to receive and process the input samples to provide data symbols, and

a coherent demodulator coupled to the pilot and data processors and configured to coherently demodulate the data symbols with the pilot symbols to provide the received sequence of symbols.

29. (Amended) [The method of claim 26,] A method for decoding messages in which at least one signaling characteristic of the messages is not known *a priori*, the method comprising: 112 f method App.

receiving a sequence for a transmitted message;

computing a metric value for each of a plurality of hypothesized messages corresponding to a plurality of hypotheses for the at least one unknown signaling characteristic of the transmitted message, wherein the metric value is computed based on a metric derived to approximately maximize a joint *a posteriori* probability between the received sequence and the hypothesized messages; and

selecting a hypothesized message having a best metric value as the transmitted message,

further comprising:

a signal and noise estimator coupled to the demodulator and configured to estimate signal amplitude of symbols in a transmitted sequence corresponding to the received sequence and to further estimate noise variance in the received sequence.

30. (Newly added) The receiver unit of claim 28, wherein the decoder is a Viterbi decoder.